

Listing of Claims:

Claim 1 (previously presented): In a data communication network for supporting mobile users, a method of operating a mobile control function, said method comprising:

exchanging information with a mobile station via a radio access network according to a radio access network protocol;

exchanging call control information with a call agent associated with a call of said mobile station, said call agent performing call control operations comprising call setup for both mobile and non-mobile calls; and

maintaining connection state information for said mobile station while said mobile station is handled via said radio access network.

Claim 2 (original): The method of claim 1 further comprising:

upon receipt of a handoff request from said radio access network, transferring responsibility for maintaining connection state information to another mobile control function.

Claim 3 (original): The method of claim 1 wherein exchanging call control information comprises exchanging call control information via an IP network.

Claim 4 (previously presented): In a data communication network for supporting mobile users, a method of operating a call agent, said method comprising:

performing call control operations comprising call setup for both mobile and non-mobile calls;

exchanging call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent; and

maintaining call state information for said mobile station.

Claim 5 (original): The method of claim 4 further comprising:

upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function , exchanging call control information with said second mobile control function ;

continuing to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

Claim 6 (original): The method of claim 4 wherein said call control information comprises an indication of an inbound call for said mobile station.

Claim 7 (original): The method of claim 4 wherein said call control information comprises an indication of a dialed call from said mobile station.

Claim 8 (original): The method of claim 4 wherein exchanging call control information comprises exchanging call control information via an IP network.

Claim 9 (previously presented): For use in a data communication network for supporting mobile users, a computer program product for operating a mobile control function, said product comprising:

code that causes a processor to exchange information with a mobile station via a radio access network according to a radio access network protocol;

code that causes said processor to exchange call control information with a call agent associated with a call of said mobile station, said call agent performing call control operations comprising call setup for both mobile and non-mobile calls;

code that causes said processor to maintain connection state information for said mobile station while said mobile station is handled via said radio access network; and
a computer-readable storage medium for storing the codes.

Claim 10 (original): The computer program product of claim 9 further comprising:

code that, upon receipt of a handoff request from said radio access network, code that causes said processor to transfer responsibility for maintaining connection state information to another mobile control function.

Claim 11 (original): The computer program product of claim 9 wherein said code that causes said processor to exchange call control information comprises code that exchanges call control information via an IP network.

Claim 12 (previously presented): For use in a data communication network for supporting mobile users, a computer program product for operating a call agent, said product comprising:

code that causes a processor to perform call control operations comprising call setup for both mobile and non-mobile calls;

code that causes said a processor to exchange call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent;

code that causes said processor to maintain call state information for said mobile station; and

a computer-readable storage medium that stores the codes.

Claim 13 (original): The product of claim 12 further comprising:

code that upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function , causes said processor to exchange call control information with said second mobile control function ; and

code that causes said processor to continue to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

Claim 14 (original): The product of claim 12 wherein said call control information comprises an indication of an inbound call for said mobile station.

Claim 15 (original): The product of claim 12 wherein said call control information comprises an indication of a dialed call from said mobile station.

Claim 16 (original): The product of claim 12 wherein said code that causes said processor to exchange call control information comprises code that causes said processor to exchange call control information via an IP network.

Claim 17 (previously presented): For use in a data communication network for supporting mobile users, an apparatus for operating a mobile control function, said method comprising:

a processor that executes software; and

a computer-readable storage medium that stores said software, said software comprising:

code that causes said processor to exchange information with a mobile station via a radio access network according to a radio access network protocol;

code that causes said processor to exchange call control information with a call agent associated with a call of said mobile station, said call agent performing call control operations comprising call setup for both mobile and non-mobile calls; and

code that causes said processor to maintain connection state information for said mobile station while said mobile station is handled via said radio access network.

Claim 18 (original): The apparatus of claim 17 wherein said software further comprises:

code that, upon receipt of a handoff request from said radio access network, that causes said processor to transfer responsibility for maintaining connection state information to another mobile control function.

Claim 19 (original): The apparatus of claim 17 wherein said code that exchanges call control information comprises code that exchanges call control information via an IP network.

Claim 20 (previously presented): For use in a data communication network for supporting mobile users, apparatus for operating a call agent, said apparatus comprising:

a processor that executes software;

a computer-readable storage medium that stores said software, said software comprising:

code that causes said processor to perform call control operations comprising call setup for both mobile and non-mobile calls;

code that causes said processor to exchange call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent; and

code that causes said processor to maintain call state information for said mobile station.

Claim 21 (original): The apparatus of claim 20 wherein said software further comprises:

code that upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function , causes said processor to exchange call control information with said second mobile control function ; and

code that causes said processor to continue to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

Claim 22 (original): The apparatus of claim 20 wherein said call control information comprises an indication of an inbound call for said mobile station.

Claim 23 (original): The apparatus of claim 20 wherein said call control information comprises an indication of a dialed call from said mobile station.

Claim 24 (original): The apparatus of claim 20 wherein said code that exchanges call control information comprises code that exchanges call control information via an IP network.

Claim 25 (previously presented): In a data communication network for supporting mobile users, apparatus for operating a mobile control function, said apparatus comprising:

means for exchanging information with a mobile station via a radio access network according to a radio access network protocol;

means for exchanging call control information with a call agent associated with a call of said mobile station, said call agent performing call control operations comprising call setup for both mobile and non-mobile calls; and

means for maintaining connection state information for said mobile station while said mobile station is handled via said radio access network.

Claim 26 (original): The apparatus of claim 25 further comprising:

means for, upon receipt of a handoff request from said radio access network, transferring responsibility for maintaining connection state information to another mobile control function.

Claim 27 (original): The apparatus of claim 25 wherein said means for exchanging call control information comprises means for exchanging call control information via an IP network.

Claim 28 (previously presented): In a data communication network for supporting mobile users, apparatus for operating a call agent, said apparatus comprising:

means for performing call control operations comprising call setup for both mobile and non-mobile calls;

means for exchanging call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent; and

means for maintaining call state information for said mobile station.

Claim 29 (original): The apparatus of claim 28 further comprising:

means for, upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function, exchanging call control information with said second mobile control function; and

means for continuing to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

Claim 30 (original): The apparatus of claim 28 wherein said call control information comprises an indication of an inbound call for said mobile station.

Claim 31 (original): The apparatus of claim 28 wherein said call control information comprises an indication of a dialed call from said mobile station.

Claim 32 (original): The apparatus of claim 28 wherein said means for exchanging call control information comprises means for exchanging call control information via an IP network.

Claim 33 (previously presented): A data communication network,
comprising:

a mobile control function, which is responsible for mobility management of a mobile station, that exchanges information via a radio access network according to a radio access network protocol and maintains connection state information for said mobile station while said mobile station is handled via said radio access network; and

a call agent capable of performing call control operations comprising call setup for both mobile and non-mobile calls, which is associated with a call of said mobile station, that exchanges call control information with said mobile control function and maintaining call state information for said mobile station.

Claim 34 (previously presented): The network of claim 33 wherein upon receipt of a handoff request from said radio access network, said mobile control function transfers responsibility for maintaining connection state information to another mobile control function.

Claim 35 (previously presented): The network of claim 33, wherein said connection state information is mobile registered or session active.

Claim 36 (previously presented): The network of claim 33, wherein said call state information is connected, call in progress, releasing, suspend, or busy.